

**AMENDMENTS TO THE CLAIMS**

In the set of claims within the Application, please amend each claim as hereinafter indicated.

1. (Currently Amended) A safety system for a vehicle, said safety system comprising:

an occupant sensor located onboard said vehicle and operable to generate an occupant characteristic signal;

a plurality of discretized patch sensors coupled to a peripheral area of [[the]] said vehicle and generating operable to generate at least one collision detection signal; and

a controller coupled to said occupant sensor and said plurality of discretized patch sensors;

wherein said controller is operable to determine an occupant status in response to said occupant characteristic signal, determining determine a collision type in response to said at least one collision detection signal, and performing perform at least one countermeasure in response to said occupant status and said collision type.

2. (Currently Amended) A safety system as in claim 1, wherein said plurality of discretized patch sensors are at least partially formed of a poly-vinylidene fluoride material.

3. (Currently Amended) A safety system as in claim 1, wherein said plurality of discretized patch sensors are in a composite form.

4. (Currently Amended) A safety system as in claim 1, wherein said plurality of discretized patch sensors are coupled to a bumper of [[the]] said vehicle.

5. (Currently Amended) A safety system as in claim 1, wherein said controller comprises:

a collision contact location estimator for determining said collision type, comprising which includes determining a collision severity and a collision contact location of the on said vehicle, in response to said at least one collision detection signal; and

a coordinated device activation system for performing said at least one countermeasure in response to said collision type.

6. (Currently Amended) A safety system as in claim 5, wherein said collision contact location estimator, in determining said collision severity, generates is operable to generate at least one collision severity signal corresponding to said at least one collision detection signal.

7. (Currently Amended) A safety system as in claim 5, wherein said collision contact location estimator determines is operable to determine said collision contact location relative to said plurality of discretized patch sensors in response to values selected from at least one of a plurality of location threshold values, time synchronized comparative magnitude values, and signature values of [[said]] the collision detection signals.

8. (Currently Amended) A safety system as in claim 5, wherein said collision contact location estimator determines is operable to determine said collision contact location relative to said plurality of discretized patch sensors in response to at least one collision confirmation threshold value.

9. (Currently Amended) A safety system for a vehicle, said safety system comprising:

an occupant sensor located onboard said vehicle and operable to generate an occupant characteristic signal;

a plurality of collision detection sensors coupled to [[a]] the periphery of [[the]] said vehicle and generating operable to generate at least one collision detection signal; and

a controller coupled to said occupant sensor and said plurality of collision detection sensors and comprising[[;]] (i) a collision contact location estimator for determining a collision type, comprising which includes determining a collision severity and a collision contact location on [[the]] said vehicle, in response to said at least one collision detection signal[[;]], and (ii) a coordinated device activation device system for performing at least one countermeasure in response to said occupant characteristic signal and said collision type.

10. (Currently Amended) A safety system as in claim 9, wherein said plurality of collision detection sensors are in the form of a plurality of discretized patch sensors.

11. (Currently Amended) A safety system as in claim 9, wherein said plurality of collision detection sensors are at least partially formed of a poly-vinylidene fluoride material.

12. (Currently Amended) A safety system as in claim [[9]] 10, wherein said plurality of discretized patch sensors are in a composite form.

13. (Currently Amended) A safety system as in claim 9, wherein said plurality of collision detection sensors are non-accelerometer type sensors.

14. (Currently Amended) A safety system as in claim 9, wherein said collision contact location estimator, in determining said collision severity, generates is operable to generate at least one collision severity signal corresponding to said at least one collision detection signal.

15. (Currently Amended) A system as in claim 9 A safety system for a vehicle, said safety system comprising:

a plurality of collision detection sensors coupled to the periphery of said vehicle and operable to generate at least one collision detection signal; and

a controller coupled to said plurality of collision detection sensors and comprising (i) a collision contact location estimator for determining a collision type, which includes determining a collision severity and a collision contact location on said vehicle, in response to said at least one collision detection signal, and (ii) a coordinated device activation system for performing at least one countermeasure in response to said collision type;

wherein said collision contact location estimator, in determining said collision severity, generates is operable to generate at least one collision severity signal corresponding to approximately  $K_i V_i (1 - e^{-\tau t})$ , where in which  $V_i$  is voltage output from the  $i^{\text{th}}$  collision detection sensor,  $K_i$  is an adaptive gain, and  $\tau$  is an adjustable filter time-constant.

16. (Currently Amended) A safety system as in claim 9, wherein said collision contact location estimator determines is operable to determine said collision contact location relative to

said plurality of collision detection sensors in response to values selected from at least one of a plurality of location threshold values, time synchronized comparative magnitude values, and signature values of [[said]] the collision detection signals.

17. (Currently Amended) A safety system as in claim 9, wherein said collision contact location estimator determines is operable to determine said collision contact location relative to said plurality of collision detection sensors in response to at least one collision confirmation threshold value.

18. (Currently Amended) A safety system as in claim 17, wherein said coordinated device activation system performs is operable to perform said at least one adaptive countermeasure based on the contacted area of said vehicle when said collision confirmation threshold value is exceeded.

19. (Currently Amended) A method of determining collision type and coordinating activation activating [[of]] safety systems [[of]] on a vehicle, said method comprising the steps of:  
sensing an occupant onboard said vehicle and generating at least one occupant characteristic signal:

detecting a collision onboard said vehicle and generating at least one collision detection signal;

determining an occupant status in response to said at least one occupant characteristic signal;

determining collision the severity and collision the contact location of said collision onboard [[the]] said vehicle in response to said at least one collision detection signal; [[and]]

determining a collision type in response to said collision severity and said collision contact location of said collision; and

generating a countermeasure signal in response to said occupant status and said collision type.

20. (Currently Amended) A method as in claim 19, said method further comprising the step of performing deploying at least one countermeasure safety device in response to said collision type countermeasure signal.